Application No. 10/533231
Responsive to the office action dated April 15, 2009

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in this application.

Listing of Claims:

1. (Currently Amended) A two-component developer comprising a carrier and a toner containing a binder resin, a colorant, a wax, and an additive,

wherein the carrier comprises a core material whose surface is coated with a resin composition composed of a fluorine-modified silicone resin containing an aminosilane coupling agent,

the resin composition contains 5 to 40 parts by weight of the aminosilane coupling agent per 100 parts by weight of the resin composition,

the fluorine-modified silicone resin comprises a crosslinkable fluorine-modified silicone resin obtained by reacting a perfluoroalkyl group-containing organosilicon compound in an amount of at least 3 parts by weight and no more than 20 parts by weight with 100 parts by weight of a polyorganosiloxane, and

the wax contained in the toner is at least one wax selected from the group consisting of following A~~, B, C or D~~:

A) a synthetic wax with a DSC endothermic peak temperature of 80 to 120°C and an acid value of 5 to 80 mgKOH/g, wherein the synthetic wax is a reacted compound of ~~obtained by reacting~~ at least a C_4 to C_{30} long chain alkyl alcohol, an unsaturated polycarboxylic acid or anhydride thereof, and an unsaturated hydrocarbon wax[[;]]

~~B) one type or two types of wax with a DSC endothermic peak temperature of 50 to 120°C, an iodine value of 25 or less, and a saponification value of 30 to 300, selected from the group consisting of a meadowfoam oil derivative, a jojoba oil derivative, Japan wax, beeswax, candelilla wax, montan wax, ceresin wax, and rice wax;~~

~~C) at least one fatty acid amide wax selected from among C_{16} to C_{24} aliphatic amide waxes and alkylene bis fatty acid amides of saturated, monounsaturated, or diunsaturated fatty acids; and~~

~~D) at least one type of fatty acid ester wax selected from among hydroxystearic acid derivatives, glycerol fatty acid esters, glycol fatty acid esters, and sorbitan fatty acid esters~~.

2. (Previously Presented) The two-component developer according to Claim 1, wherein the toner is produced by the external addition of at least an inorganic micropowder whose average particle size is from 6 to 120 nm in an amount of 1.0 to 5.5 parts by weight per 100 parts by weight of a toner matrix containing the synthetic wax of A.

3. (Previously Presented) The two-component developer according to Claim 2, wherein, in the molecular weight distribution of the synthetic wax of A by gel permeation chromatography (GPC), the weight average molecular weight is from 1000 to 6000, the Z average molecular weight is from 1500 to 9000, the ratio of weight average molecular weight to number average molecular weight (weight average molecular weight/number average molecular weight) is from 1.1 to 3.8, the ratio of the Z average molecular weight to the number average molecular weight (Z average molecular weight/number average molecular weight) is from 1.5 to 6.5, and there is at least one molecular weight maximum peak in the region from 1×10^3 to 3×10^4.

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Original) The two-component developer according to Claim 1, wherein the toner is produced by the external addition of:

an inorganic micropowder whose average particle size is from 6 to 20 nm and whose ignition loss is from 0.5 to 25 wt% in an amount of 0.5 to 2 parts by weight per 100 parts by weight of a toner matrix, and

an inorganic micropowder whose average particle size is from 30 to 120 nm and whose ignition loss is from 0.1 to 23 wt% in an amount of 0.5 to 3.5 parts by weight per 100 parts by weight of a toner matrix.

9. (Original) The two-component developer according to Claim 1, wherein the toner is produced by the external addition of a negatively-chargeable inorganic micropowder whose average particle size is from 6 to 120 nm and whose ignition loss is from 0.5 to 25 wt% in an amount of 0.8 to 4 parts by weight per 100 parts by weight of a toner matrix,

and of a positively-chargeable inorganic micropowder whose average particle size is from 6 to 120 nm and whose ignition loss is from 0.5 to 25 wt% in an amount of 0.2 to 1.5 parts by weight per 100 parts by weight of a toner matrix.

10. (Original) The two-component developer according to Claim 1, wherein the toner is produced by the external addition of:

a negatively-chargeable inorganic micropowder whose average particle size is from 6 to 20 nm and whose ignition loss is from 0.5 to 25 wt% in an amount of 0.6 to 2 parts by weight per 100 parts by weight of toner matrix particles,

a negatively-chargeable inorganic micropowder whose average particle size is from 30 to 120 nm and whose ignition loss is from 0.1 to 23 wt% in an amount of 0.2 to 2.0 parts by weight per 100 parts by weight of toner matrix particles, and

a positively-chargeable inorganic micropowder whose average particle size is from 6 to 20 nm and whose ignition loss is from 0.5 to 25 wt% in an amount of 0.2 to 1.5 parts by weight per 100 parts by weight of toner matrix particles.

11. (Cancelled)

12. (Original) The two-component developer according to Claim 1, wherein the blend proportion of the toner and carrier is such that the toner accounts for at least 2 wt% and no more than 10 wt%, and the carrier for at least 90 wt% and no more than 98 wt%.

13. (Original) The two-component developer according to Claim 1, wherein the additive is added in a proportion of at least 1.5 wt% and no more than 6 wt% per 100 parts by weight of toner.

14. (Cancelled)

15. (Previously Presented) The two-component developer according to Claim 1, wherein the perfluoroalkyl group-containing organosilicon compound is at least one compound selected from among $CF_3CH_2CH_2Si(OCH_3)_3$, $C_4F_9CH_2CH_2Si(CH_3)(OCH_3)_2$, $C_8F_{17}CH_2CH_2Si(OCH_3)_3$, $C_8F_{17}CH_2CH_2Si(OC_2H_5)_3$, and $(CH_3)_2CF(CF_2)_8CH_2CH_2Si(OCH_3)_3$.

16. (Previously Presented) The two-component developer according to Claim 1, wherein the polyorganosiloxane is at least one type selected from among Chemical Formulas 1 and 2 below:

$$R^3-(O-\underset{\substack{| \\ R^2}}{\overset{\substack{R^1 \\ |}}{Si}}-)_m-O-R^4$$

(Chemical Formula 1)

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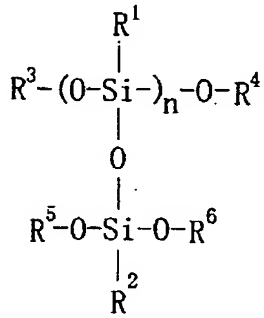
(where R^1 and R^2 are each a hydrogen atom, halogen atom, hydroxy group, methoxy group, or C_1 to C_4 alkyl group or phenyl group, R^3 and R^4 are each a C_1 to C_4 alkyl group or phenyl group, and m is a positive integer indicating the average degree of polymerization)



(Chemical Formula 2)

(where R^1 and R^2 are each a hydrogen atom, halogen atom, hydroxy group, methoxy group, or C_1 to C_4 alkyl group or phenyl group, R^3, R^4, R^5, and R^6 are each a C_1 to C_4 alkyl group or phenyl group, and n is a positive integer indicating the average degree of polymerization).

17. (Cancelled)

18. (Original) The two-component developer according to Claim 1, wherein the aminosilane coupling agent is at least one type selected from among γ-(2-aminoethyl)aminopropyltrimethoxysilane, γ-(2-aminoethyl)aminopropylmethyldimethoxysilane, and octadecylmethyl[3-(trimethoxysilyl)propyl] ammonium chloride.

19 - 21. (Cancelled)